

**Lawns for Island Homes:**  
**CHOOSING A GRASS**  
**FOR YOUR LAWN**

David A. Akana  
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## **Acknowledgments**

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*To choose a grass for your lawn, ask yourself a few important questions:*

- 1. How much time can you devote to lawn care?*
- 2. What are you going to use the lawn for?*
- 3. What is the type of soil you plan to establish your lawn on?*
- 4. What equipment will you need for the proper care of your lawn?*
- 5. Is your family interested in caring for a lawn?*
- 6. How much money will you be willing to spend for establishing and maintaining a lawn?*

Lawn care should be a family affair, for every family member enjoys the lawn for its beauty, its recreational use, and for entertaining friends and relatives. Nothing but grass feels so good to the bare feet. Nothing but grass is soft, spongy, and resilient, yet easy to keep clean.

Your choice of lawn grass depends upon the type of use your lawn will receive. Will your lawn be for beauty alone or will it be for family fun and entertainment? Some of the lawn grasses can be played and walked on continually, while others cannot withstand much traffic. For instance, most bermudagrasses and all zoysiagrasses can stand wear whereas McCoygrass is easily damaged. Unlike the bermudagrasses, the zoysiagrasses, buffalograss and McCoygrass grow well under shade. Likewise, centipedegrass is also adapted to shade.

Most soils can produce good grass but some are too clayey and remain too wet. Some soils are sweet (alkaline) while others are sour (acid). These soil conditions, if corrected, can grow good grass.

Nowadays, most homeowners would like a lawn grass that needs no mowing. Unfortunately, all of the presently used lawn grasses do need some mowing, although new grasses are being developed that require less mowing than others. For small lawn areas you will find that a hand mower will do. If the lawn area is large, the homeowner should purchase a power reel mower. Rotary mowers have a place in lawn care where evenness of cut is not too critical. The blades should be kept sharp and adjusted at all times. A lawn edger is another piece of equipment you should obtain. If you have a mower, an edger, a sprayer, a hose, a sprinkler, and perhaps a hand fertilizer-spreader, and if you put your best efforts into caring for the lawn, you can have a good lawn.

Your lawn is an investment. In planning your landscape, set aside

definite areas for grass, shrubs, and other ground covers. Plan a definite amount of money to spend for the lawn.

Your lawn will only be as good as your family's desire to make it so. Make lawn care a family project. Manage it right and you will have a green carpet you will enjoy. If your family members need persuasion before they will help care for the lawn, ask them, What would a beautiful home be without carpeting? Likewise, your garden deserves to have a green carpet. A fine lawn is to the exterior of a home what fine carpeting is to the interior.

The following descriptions and evaluations of the available lawn grasses suitable to Hawaii will help you decide upon the type of lawn grass best suited for your needs.

## AN EVALUATION OF LAWN

## GRASSES FOR HAWAII

LAWN GRASSES AND APPEARANCE	CHARACTERISTICS		LOCATION	PROPAGATION METHOD/ 1,000 sq. ft.	BEST MOWING HEIGHT	NITROGEN FERTILIZER REQUIREMENTS FOR BEST QUALITY
	DESIRABLE	UNDESIRABLE				
<b>Bermudagrasses</b> <b>Common, Manienie</b> <i>(Cynodon dactylon, Pers.)</i> Gray-green; medium-coarse texture; long internodes.	Resists wear; has deep root system, low moisture requirement; tolerates saline and alkaline soils; stands moderate acidity; tolerates many herbicides.	Vigorous grower, often where not wanted; susceptible to lawn armyworms, grass webworm, bermudagrass mite, hunting billbug; builds thatch; easily invaded by weeds.	Sun	<i>Seed</i> hulled. 1 to 2 lbs. <i>Sprigs</i> 1 to 2 bu. <i>Stolons</i> 3 to 5 bu. <i>Plugs</i> 8 to 10 sq. ft.	½ to ¾ in.	(lb. actual nitrogen/ 1,000 sq. ft.) 1 lb. per month or 2 to 3 lbs. every 30 to 90 days or as determined by color.
<b>Tifgreen (Hybrid)</b> <b>Tifton 328</b> <i>(Cynodon 'Tifgreen')</i> Dark green; fine texture with prostrate growth; shorter internodes than common bermudagrass.	Resists wear; tolerates saline and alkaline soils; stands moderate acidity; grows in compacted soils; shy flowering except during summer; beautiful appearance under proper management.	Vigorous grower; very susceptible to lawn armyworms; susceptible to hunting billbugs, grass webworm, bermudagrass scales; builds thatch; injured by some herbicides.	Sun	<i>Sprigs</i> 1 to 2 bu. <i>Stolons</i> 3 to 5 bu. <i>Plugs</i> 8 to 10 sq. ft.	3/16 to ¼ in. for putting greens; ½ to ¾ in. for lawns.	1 lb. per month or 2 to 3 lbs. every 30 to 90 days or as determined by color.
<b>Tifdwarf (Hybrid)</b> <i>(Cynodon 'Tifdwarf')</i> Dark green; finer texture than Tifgreen; shorter blades and internodes than Tifgreen; height of growth ¼ that of Tifgreen.	Resists wear; tolerates saline and alkaline soils; stands moderate acidity; denser sod than Tifgreen requiring less frequent mowing; fairly fast recovery.	Very susceptible to grass webworm, also susceptible to other insects and certain diseases; builds thatch; slower than Tifgreen to form sod; injured by some herbicides.	Sun	<i>Sprigs</i> 1 to 2 bu. <i>Stolons</i> 3 to 5 bu. <i>Plugs</i> 8 to 10 sq. ft.	3/16 to 3/8 in. for putting greens; ½ to ¾ in. for lawns.	1 lb. per month or 2 to 3 lbs. every 30 to 90 days or as determined by color.
<b>No-mow</b> <i>(Cynodon dactylon 'No-mow')</i> Dark blue-green; medium texture; low, flat creeping growth; not more than 3 inches high.	Resists some wear; tolerates saline and alkaline soils; grows in compacted soils; drought resistant; requires minimum mowing.	Susceptible to grass webworm, lawn armyworms, hunting billbugs; severely damaged by disease; builds thatch; slow to establish.	Sun or light shade	<i>Sprigs</i> 1 to 2 bu. <i>Stolons</i> 3 to 5 bu. <i>Plugs</i> 8 to 10 sq. ft.	½ to ¾ in.	1 lb. per month or 2 to 3 lbs. every 30 to 90 days or as determined by color.



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	DESIRABLE	UNDESIRABLE				
<b>Zoysiagrasses*</b>  <b>Mascarene, Temple, Korean, Velvet</b> ( <i>Zoysia* tenuifolia</i> , Willd.)  <b>Medium green; fine texture; blades stiff with sharp points; pronounced hum- mocks or humps.</b>	Resists wear; shade tolerant; may be left unmowed; sel- dom flowers; tolerates most herbicides.	Badly attacked by billbugs; may be attacked by rust fungus; builds thatch; slowest of the zoysias to establish; forms hummocks that are difficult to mow; requires heavy-duty mower; requires good drainage; demands much water; leaves stiff.	Sun or shifting shade	<i>Plugs</i> 1 sq. yd. / 350 sq. ft. <i>Sprigs</i> 1 sq. yd. / 800 sq. ft. <i>Stolons</i> 3 to 5 bu.	As desired or ½ to ¾ in.	(lb. actual nitrogen/ 1,000 sq. ft.) ½ lb. per month or 2 lbs. every 30 to 90 days or as determined by color.
<b>Manilagrass</b> ( <i>Zoysia* matrella</i> , Merr.)  <b>Deep green; medium tex- ture; blades flat and shorter than Mascarenegrass; blades stiff; not as hummocky as Mascarenegrass.</b>	Resists wear; shade tolerant; tolerant of salinity, drought, mild acidity, compacted soils; keeps out weeds when well established; tolerates most herbicides.	Attacked by billbugs; may be attacked by rust fungus; builds thatch; slow to become estab- lished; forms some hummocks; requires good drainage; leaves stiff; requires heavy-duty mower.	Sun or shifting shade	<i>Plugs</i> 1 sq. yd. / 350 sq. ft. <i>Sprigs</i> 1 sq. yd. / 800 sq. ft. <i>Stolons</i> 3 to 5 bu.	¾ to 1 in.	½ lb. per month or 2 lbs. every 30 to 90 days or as determined by color.
<b>Emerald Zoysia*</b> ( <i>Zoysia* 'Emerald'</i> )  <b>Deep green; medium tex- ture; blades shorter than Manilagrass; blades stiff; not as hummocky as Mascarene- grass; free flowering.</b>	Resists wear; shade tolerant; tolerates salinity, drought, mild acidity, compacted soils; spreads faster than Manilagrass; best of the zoysiagrasses for lawns; keeps out weeds when well established; tolerates most herbicides.	Attacked by billbugs; may be attacked by rust fungus; builds thatch; forms some hummocks; requires heavy-duty mower; re- quires good drainage; leaves stiff; many seed heads.	Sun or shifting shade	<i>Plugs</i> 1 sq. yd. / 350 sq. ft. <i>Sprigs</i> 1 sq. yd. / 800 sq. ft. <i>Stolons</i> 3 to 5 bu.	¾ to 1 in.	½ lb. per month or 2 lbs. every 30 to 90 days or as determined by color.

\*Also spelled *zoisia*.

# AN EVALUATION OF LAWN

# GRASSES FOR HAWAII

LAWN GRASSES AND APPEARANCE	CHARACTERISTICS		LOCATION	PROPAGATION METHOD/ 1,000 sq. ft.	BEST MOWING HEIGHT	NITROGEN FERTILIZER REQUIREMENTS FOR BEST QUALITY
	DESIRABLE	UNDESIRABLE				
<b>Zoysiagrasses* (Continued)</b> <b>Meyer Z-52</b> <i>(Zoysia* japonica 'Meyer')</i> Lighter green than emerald zoysia; medium texture; leaves longer than emerald; no hummocks; stiff and prickly leaves; many seed- heads.	Resists wear; shade tolerant; tolerant of salinity, mild acidity, compacted soils; produces no hummocks; keeps out weeds when well established; tolerates most herbicides.	Attacked by billbugs; may be attacked by rust fungus; builds thatch; requires heavy-duty mow- er; needs good drainage; leaves stiff; many seed heads.	Sun or shifting shade	<i>Plugs</i> 1 sq. yd. / 350 sq. ft. <i>Sprigs</i> 1 sq. yd. / 800 sq. ft. <i>Stolons</i> 3 to 5 bu.	¾ to 1 in.	(lb. actual nitrogen/ 1,000 sq. ft.) ½ lb. per month or 2 lbs. every 30 to 90 days or as determined by color.
<b>Buffalograss or</b> <b>St. Augustinegrass</b> <i>(Stenotaphrum secundatum,</i> <i>Kuntze)</i> Light green; coarse, wide blades and stems; no under- ground stems; leaves up- right; shallow-rooted.	Resists some wear; most shade tolerant; tolerates salt and salt spray; tolerates wide range of soil and cli- matic conditions; low main- tenance requirement.	Attacked by grass webworm; pro- duces thick thatch; requires heavy- duty mower; leaves tend to grow upright; needs plenty of water; susceptible to certain herbicides.	Sun or shade	<i>Plugs</i> 350 sq. ft. <i>Sprigs</i> 10 to 20 sq. ft.	1½ to 2½ in.	1 lb. every 60 to 90 days or as determined by color.
<b>Centipedegrass or Honan-</b> <b>grass (Hunangrass)</b> <i>(Eremochloa ophiuroides,</i> <i>Hack.)</i> Medium green; medium- coarse texture intermediate between St. Augustinegrass and bermudagrass; many stolons; leaves long and narrow; shallow-rooted.	Relatively shade tolerant; does well in heavy acid soils of low fertility; makes dense weed-free sod; best for wet areas; not easily damaged by some insects and dis- eases; low maintenance re- quirement.	Attacked by grass webworm; becomes chlorotic under alkaline soil conditions; will not stand heavy traffic or poorly drained soil; needs plenty of water; sus- ceptible to certain herbicides and salt spray.	Sun or shifting shade	<i>Seed</i> 8 oz. <i>Plugs</i> 175 sq. ft. <i>Sprigs</i> 10 to 15 sq. ft.	1 to 2 in.	4 to 6 lbs. per year or as determined by color.

\*Also spelled *zoisia*.

# AN EVALUATION OF LAWN

# SUBSTITUTES FOR HAWAII

LAWN GRASSES AND APPEARANCE	CHARACTERISTICS		LOCATION	PROPAGATION METHOD/ 1,000 sq. ft.	BEST MOWING HEIGHT	NITROGEN FERTILIZER REQUIREMENTS FOR BEST QUALITY
	DESIRABLE	UNDESIRABLE				
<b>McCoygrass</b> <i>(Cyperus gracilis R. Br.)</i> Small fine-leaved perennial sedge; triangular flower; stems 3 to 12 inches high; leaves 2 to 6 inches long; grows in clumps.	Most shade tolerant; toler- ates wide range of soil conditions; grows in com- pacted soils; grows rapidly in cool weather; can be mowed.	Cannot stand traffic; invades poor turf in shady or wet areas; can become a weed; killed by herbi- cides.	Sun or shade	<i>Plugs</i> 26 sq. ft. <i>Plantlets</i> or <i>Clippings</i> as much as possible	1 to 1½ in.	(lb. actual nitrogen/ 1,000 sq. ft.) ½ lb. per month.
<b>Dichondra</b> <i>(Dichondra repens)</i> Small, creeping, hairy, leafy plants; leaves rounded or kidney-shaped.	Shade tolerant; can with- stand light traffic; can be mowed.	Susceptible to diseases; will not tolerate salinity or alkalinity; needs good drainage; can become a weed; killed by some herbi- cides; will not stand high-rainfall conditions.	Sun or shifting shade	<i>Seed</i> ½ to 1 lb. <i>Plugs</i> 10 sq. ft. <i>Runners</i> 2 to 4 bu.	1 to 1½ in.	½ to 1 lb. per month.



## LAWN GRASS SELECTIONS

### Common Bermudagrass (*Cynodon dactylon*, Pers.)

The common bermudagrass is one of the hardiest and best adapted grass for a subtropical area such as Hawaii. It is best adapted to dry, hot and sunny areas. It grows well in beach



*Section of common bermudagrass sod.*

sand. It tolerates heavy traffic and adverse conditions but does not grow well in shade. The best of the common bermudagrass varieties have relatively fine leaves and do not usually flower profusely. It has a medium coarse texture, grows in soils of nearly neutral soil conditions, and is less susceptible to insect damage. It has few disease problems. Vigorous stolons and rhizomes will often invade nearby plantings if they are not controlled. Common bermudagrass is known in Hawaii as "Manienie."

Common bermudagrass should be irrigated, fertilized regularly, and mowed each week to a height of not more than 1 inch. A lawn is started by seed, plugs, sprigs, stolons, or sod. Certified, hulled, Arizona common bermudagrass seed is recommended for seeding.

Common bermudagrass has been grown in Hawaii for many years and occupies more turf area than all other bermudagrass varieties combined. Hawaiian Common bermudagrass, as it is called by Professor Makoto Takahashi, Associate Agronomist at the University of Hawaii, is a complex of many strains, and many minor variations among strains can be detected. From the original introduction as well as from seedlings that have become established, a recognized common bermudagrass variety may someday develop in Hawaii.

Tifgreen, an excellent lawngrass, is widely used by homeowners. It is a vigorous grower, tolerates saline and alkaline soils, and withstands heavy traffic.

Tifgreen is a hybrid of two species of bermudagrasses, *Cynodon dactylon* (common bermudagrass) X *Cynodon transvaalensis* (Uganda bermudagrass). An F<sub>1</sub> hybrid, it produces no viable seeds and is pleasing in appearance, color and texture. Tifgreen will not grow in shade.

Tifgreen can be established quickly and is fast to recover from any injury, but it is susceptible to insects and certain diseases. Except during summer months, Tifgreen is “shy” in flowering.

Tifgreen is propagated by sodding, sprigging, plugging, or stolonizing. The finest textured of all bermudagrasses in Hawaii today, with the possible exception of Tifdwarf, Tifgreen can be mowed very low (3/16 to 1/4 inch) as on golf greens. It responds well to fertilization, irrigation and regular mowing. Mowing a Tifgreen lawn twice a week is not uncommon.

**Tifgreen Bermudagrass, Tifton 328**  
(*Cynodon dactylon* ‘Tifgreen’)



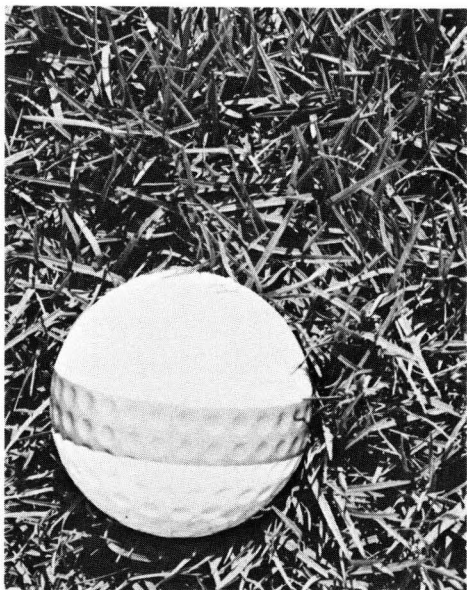
*Section of Tifgreen bermudagrass sod.*

**Tifdwarf Bermudagrass**  
(*Cynodon dactylon* 'Tifdwarf')

Tifdwarf is a mutation, or "off-shoot," of Tifgreen bermudagrass and is the latest addition to the many new lawn grass introductions to Hawaii. It was released from quarantine in March 1966 and is already in great demand by many golf courses and island homeowners.

As a lawn grass Tifdwarf does well under Hawaiian conditions. It resists wear, recovers fairly rapidly, and forms a dense sod. It will grow fairly well under shade compared with other varieties of bermudagrass.

Tifdwarf has been reported to be equal or superior to Tifgreen. It has smaller and shorter leaves, stems, internodes, and seedheads than Tifgreen. Because of its low-growing habit—it "hugs" the ground—Tifdwarf needs mowing about one-fourth as often as Tifgreen under similar management practices. If you are looking for an excellent, low-growing bermudagrass, try Tifdwarf. As with most bermudagrasses, insects must be controlled.



*Section of Tifdwarf bermudagrass sod.*



Arriving in Hawaii from Australia in 1962, this dwarf bermudagrass variety is known here as Australian No-mow. Its popularity is decreasing because it is susceptible to disease.

No-mow performs best under dry, well-drained, and well-ventilated soil conditions with infrequent but adequate irrigation. Under heavy traffic No-mow shows some browning. Under moist, poor drainage conditions and shade, it becomes brown and diseased.

No-mow has closely spaced, medium-textured leaves and low, flat, creeping growth. Its color is dark blue-green.

No-mow is mowed only to remove seedheads or to give the lawn a manicured appearance. To have a good lawn, insects and diseases must be controlled.

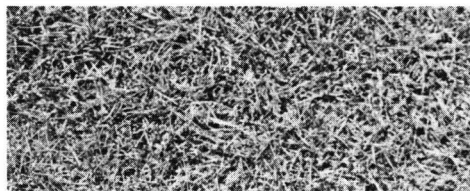
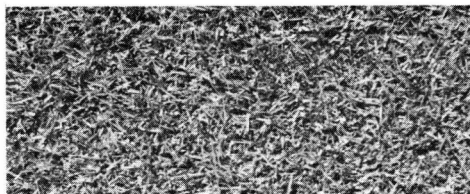
**No-mow Bermudagrass**  
(*Cynodon dactylon* 'No-mow')



*Section of No-mow bermudagrass sod.*

## Zoysiagrasses

Zoysiagrasses include a small group of lawn grasses having thin stems and harsh, rigid, and sharply pointed leaf blades, making them uncomfortable to sit or lie on. Two varieties of zoysia have stems with numerous internodes, resulting in hummocky growth.



Section of Manilagrass (*Zoysia matrella*) sod.  
Mascarenegrass (*Zoysia tenuifolia*) lawn.

Section of Mascarenegrass  
(*Zoysia tenuifolia*) sod.

Zoysiagrasses do well in the sun and some shade, keep out weeds, and do not need heavy fertilization. They will withstand wear, and tolerate some salinity, alkalinity, and mild acidity, as well as compacted soils. They are somewhat resistant to lawn armyworms but are attacked by hunting billbugs. In cooler areas and during cool, rainy weather, zoysiagrasses are sometimes affected by a rust fungus.

The zoysiagrasses used for lawns in Hawaii are Meyer Z-52 (*Zoysia japonica* 'Meyer'); Manilagrass (*Zoysia matrella*); Emerald Zoysia (*Zoysia* 'Emerald'), an improved strain of Manilagrass; and Mascarenegrass (*Zoysia tenuifolia*), also known as templegrass, Koreangrass, or velvetgrass. Of these Meyer Z-52 does not produce hummocks; the most hummocks are produced by Mascarenegrass.

When zoysiagrass (Meyer Z-52) was first released, it was said it does not need regular mowing. To the contrary, it does need mowing with a heavy-duty mower at least once in two weeks. When not mowed, Manilagrass, Emerald Zoysia, and mascarenegrass become hummocky and form thick thatches which must be removed.

St. Augustinegrass, commonly called buffalograss in Hawaii, can grow in a wide range of soil types and conditions. It is the most shade tolerant of all turfgrasses. It can withstand salt and salt sprays but cannot withstand heavy traffic.

Buffalograss has coarse, wide blades and stems and no underground stems (rhizomes). The light-green leaves usually grow upright. It requires little maintenance. Being a stoloniferous grass, St. Augustinegrass cannot stand close mowing. The recommended mowing height is 1½ to 2 inches.

Two new varieties of St. Augustine grasses have been introduced, Bitter Blue and Floratine. Floratine is reported to be the better of the two and superior to common St. Augustine.

A variety of St. Augustinegrass, *Stenotaphrum secundatum* 'Variegated', is available in Hawaii. It can be used to cover banks and moderately steep slopes. It is lower growing and more disease resistant than common buffalograss.

**Buffalograss, St. Augustinegrass**  
(*Stenotaphrum secundatum*)



Section of common buffalograss  
(*St. Augustinegrass*) sod.

Section of Floratine  
*St. Augustinegrass* sod.

Section of variegated  
*St. Augustinegrass* sod.



**Centipedegrass, Honangrass**  
*(Eremochloa ophiuroides)*



*Section of centipedegrass sod.*

Centipedegrass will not grow well in alkaline soils or in areas with lime or coral sand. Under these conditions, the leaves will "whiten." This condition, however, can be controlled by the application of nitrogen fertilizer and iron. Centipedegrass grows well under shade and acid soil conditions. It is the best low-maintenance grass for wet areas. Good drainage is important.

Centipedegrass is medium green and has a texture between St. Augustinegrass and common bermudagrass. It is shallow rooted and has many stolons.

Because centipedegrass requires little fertilizer, infrequent mowing, and is not easily damaged by diseases and insects, except the grass webworm, it is sometimes called "the poor man's grass." Centipedegrass must be irrigated regularly as it does not withstand dry conditions.

McCoygrass is not a true grass. It is a sedge which is closely allied to the grasses. McCoygrass is unique in that it is the only "lawn grass" of any consequence in Hawaii that has a tufted or bunched habit of growth. All other lawn grasses display a creeping or a trailing habit. It is also one of the few plants in which new plants are produced on flowering stalks from seeds that remain attached to the flower head.

McCoygrass is very shade tolerant. In many lawns, McCoygrass is a weed and sometimes takes over poor lawns, especially in shaded and moist areas. It can be mowed but should be allowed to flower occasionally to produce seeds. Allow the clippings, containing the seeds and plantlets, to remain in the lawn. This will help produce new plants and increase the density of the lawn. To start a new area, the planting material should be planted and watered immediately to prevent them from drying. A thin layer of soil or mulching material scattered over the seeds will help. Do not allow the soil to dry out until growth is well under way.

Sharp, perfectly aligned mower blades are needed to cut this grass. If not, the thin, narrow leaf blades will pass uncut through the smallest gap in the mower.

McCoygrass is easily killed by weed killers.

## Lawn Substitutes

### McCoygrass (*Cyperus gracilis*)



*Section of unmowed McCoygrass sod.  
Note plantlets.*

*Mowed McCoygrass growing under shade.*

**Dichondra**  
(*Dichondra repens*).



*Section of Dichondra sod.*

Dichondra is a low-growing herb which can be used as a lawn or a ground cover. Presently, very little Dichondra has been planted in Hawaii.

Dichondra does well in shifting shade but it also grows well in full sun. If left unmowed, it will not withstand much traffic. Mowing helps to produce more uniform and smaller leaves and creates a dense turf which can withstand traffic. Proper watering, good drainage, ample fertilizing, and regular bi-monthly mowing are necessary to maintain a good Dichondra lawn. Frequent light fertilization is needed to maintain a good stand of rich-colored foliage. Several herbicides are available to control certain weeds in a Dichondra lawn.

*Sclerotium rolfsii* fungus has been observed to damage Dichondra lawns in Hawaii. This fungus can be controlled with PCNB fungicides.

To start a Dichondra lawn, prepare a weed-free bed and grade the soil surface carefully. Apply nitrogen fertilizer before planting.

Other grass species being used for lawns are the following:

### **Hilograss**

*(Paspalum conjugatum)*

Hilograss is considered an invader in many lawns. It is probably introduced in acid topsoil. Where it is established, Hilograss makes a serviceable lawn. It thrives in acid and wet soils and tolerates low fertility. It is light green with pointed, flat, and coarse leaf blades. Regular weekly mowing is desirable to control the fast, upright leafy growth.

### **Henry's Crabgrass**

*(Digitaria henryi)*

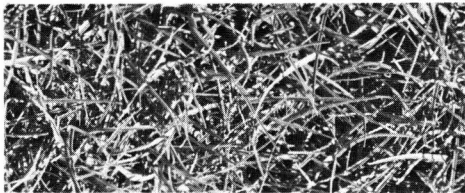
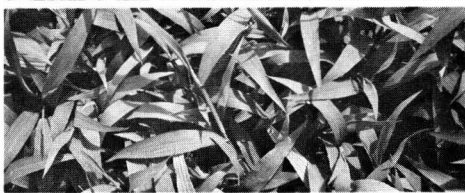
Adapted to wet, poor, acid and compacted soils, Henry's crabgrass is a creeping perennial of light grayish-green color, which does not blend with bermudagrass. It forms a closely matted sod which crowds out other species. It tolerates partial shade.

### **Ugandagrass, African Bermudagrass**

*(Cynodon transvaalensis)*

Ugandagrass has a place in island lawns. It is a very fine-textured, fine-bladed, medium-green, low-growing, and relatively slow-spreading bermudagrass. Where established, it is persistent and sometimes difficult to eradicate. It is exceptionally salt- and drought-tolerant but requires good subsoil drainage. It produces a thick, somewhat spongy, turf which becomes difficult to mow. Because it regrows rapidly, it should be mowed once a week or oftener. It has a high phosphate fertilizer requirement and tends to become off-color during the cool season, especially in high elevations.

## **Secondary List of Lawn Grasses and Substitutes**



*Section of Hilograss sod.*

*Section of crabgrass sod.*

*Section of Ugandagrass sod.*



### **Kikuyugrass**

*(Pennisetum clandestinum)*

Probably an escape from pasture lands, kikuyugrass is found mainly in areas of high rainfall. It is a deep-rooted perennial with vigorous rhizomes and numerous large, creeping stolons. Kikuyugrass should be considered for the lawn above 2,500-foot elevations where other tropical lawn grasses do not fare well. When mowed and thinned regularly, it provides a good cover.

### **Carpetgrass**

*(Axonopus affinis)*

Like Hilograss, carpetgrass is sometimes considered an invader. It thrives in wet, poorly drained, compacted and acid soils of low fertility, is of medium texture with wide leaf blades, requires little maintenance and not much fertilization. It spreads by runners and forms a dense sod. It has little or no insect and disease problem.

### **Creeping Bentgrass**

*(Agrostis palustris)*

Creeping bentgrass, used on golf greens, is the "Cadillac" of grasses. It is a high maintenance grass requiring regular and frequent irrigation, mowing, fertilization, insect and disease control. Bentgrass is not recommended for home lawns because of the high maintenance requirement. Cocoos, Seaside, Pennncross, and Old Orchard bentgrasses are now used successfully on golf greens, even though they are cool-season grasses of humid temperate regions.



*Section of kikuyugrass sod.*

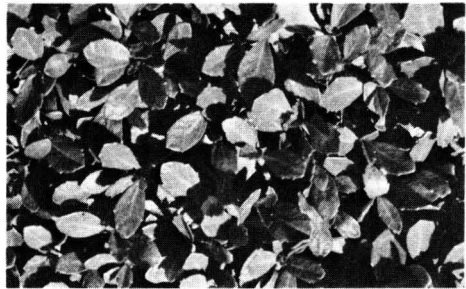
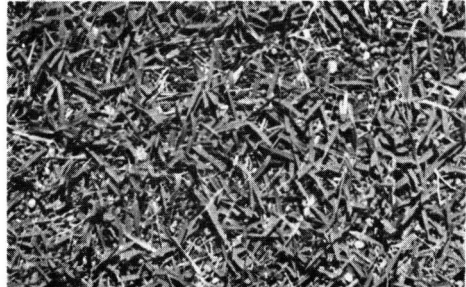
### U-3 Bermudagrass (*Cynodon dactylon*)

In Hawaii, U-3 bermudagrass has not performed well. U-3 is coarser in texture, has larger leaves and longer internodes than Hawaiian Common bermudagrass. Seeds produced from U-3 are available but they are extremely variable.

### Grass Substitute

#### Lippia (*Phyla nodiflora*)

Although mainly used as a ground cover, lippia can be used for lawns and along parkways. When mowed low, lippia makes an attractive lawn but it cannot stand heavy traffic. It requires regular irrigation and fertilization. It is attacked by insects and diseases but control measures are available. Lippia attracts honey bees during flowering and should be avoided if children are allergic to bee stings.



Section of U-3 Bermudagrass sod.  
Section of lippia sod.

**Amount of fertilizer material required to give  
approximately 1 and 2 lbs. actual nitrogen(N) to cover 1,000 sq. ft. of area**

<u>Fertilizer*</u>	<u>1 lb. Nitrogen</u> <u>LB.</u>	<u>2 lb. Nitrogen</u> <u>LB.</u>
10-10-2	10	20
10-10-5	10	20
10-10-6.6	10	20
10-20-20	10	20
10-30-10	10	20
10-10-10	10	20
13-13-13	7½	15
16-16-16	6½	13
18- 8- 4	6	12
16- 4- 4	6½	13
20- 5- 5	5	10
20- 5-10	5	10
11-48- 0	10	20
21-53- 0	5	10
21- 0- 0	5	10
22- 4- 4	4½	9
46- 0- 0	2¼	4½

\*Commercial fertilizers are labeled with a three-number analysis, N-P-K, which always states in that order the percent of each of these three major plant foods. For example, a 10-10-5 commercial fertilizer contains 10 percent nitrogen (N), 10 percent phosphoric acid ( $P_2O_5$ ), and 5 percent potash (K).

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